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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/198,376 11/24/98 OKAMOTO

A NU-98035

EXAMINER

FLANIGAN, A

ART UNIT

PAPER NUMBER

3743

DATE MAILED: 06/28/00

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

## Office Action Summary

Application No.

09/198,376

Applicant(s)

OKAMOTO ET AL.

Examiner

Allen J. Flanigan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2000.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 4-6, 11-19, and 26-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-6, 11-19, and 26-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some \* c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) \_\_\_\_\_.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

### Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)                      18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 12.                      20) ☐ Other: \_\_\_\_\_

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 4, 11-13, 16, 17, and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Teeg et al. and Benson et al.

Please see the comments made in regard to the above rejection in the previous Office action.

Claims 5, 6, 14, 15, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Teeg et al. and Benson et al as applied to claims 4, 13, and 17 above, and further in view of Amore.

Please see the comments made in regard to the above rejection in the previous Office action.

Applicant's arguments filed 5/22/2000 have been fully considered but they are not persuasive.

The primary argument against the rejection under 35 U.S.C. 103 based on the above-cited references appears to be based on a mischaracterization or misunderstanding of the teachings of Benson et al. Please see lines 8-28 of column 13, in particular lines 24-25: "When it [Vanadium oxide coating 170] is hot, it becomes more emissive, and when it cools, it becomes less emissive." This is exactly the property that applicants are claiming and describing as "positive temperature difference".

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In regard to the specific compounds recited in the claims, the applicants basically reiterate their claim (incorrect) that the prior art does not teach a coating which increases in emissivity at increased temperature, and also claims that the compounds recited in the claims evince "superior results" in terms of a larger variation in emissivity vs. temperature. Fig. 3 shows a variation in emissivity from .3-.7 over a temperature range of 250 degrees Kelvin; Benson et al. disclose that "Vanadium Oxide can be doped to vary through a full range of emissivity, from about 0.05 to about 0.8, within about five degrees Celsius temperature change" (which is equivalent to 5 degrees K). This represents a markedly inferior performance relative to Benson et al.'s suggested materials. Finally, the applicants indicate that their preferred materials exhibit transition near room temperature. First, it is noted that Benson disclose that "Other thermochromic materials besides vanadium oxide" can be used; they also imply that the transition temperature range (the range in which the transition from low emissivity to high emissivity occurs) can be "designed in" (lines 40-41 of column 13). Thus, the selection of a material suitable for maintaining whatever desired temperature was called for would have been obvious.

Again, it would appear that the applicant does not dispute that the claimed materials are themselves not novel, and that their properties are known; the selection of known materials based on their suitability for an intended use is obvious. ***In re Leshin*, 125 U.S.P.Q. 416.** The prior art clearly suggests both the use of materials which increase emissivity as a

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function of temperature, and the "designing" of the particular transition range in which the coating "switches" from low to high emissivity.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen J. Flanigan whose telephone number is (703) 308-1015. The examiner can normally be reached on M-F 8:40-5:10.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus can be reached on (703) 308-1935. The fax phone numbers for the organization where this application or proceeding is

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assigned are (703) 308-7764 for regular communications and (703) 305-3463 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.



Allen J. Flanigan  
Primary Examiner  
Art Unit 3743

AJF

June 27, 2000